Semester- III

DISSERTATION PHASE 1			
Course Code	**MTCP301**	CIE Marks	100
Teaching Hours/Week (L:S:SDA)	8 hrs (2:6:6)	Total Marks	100
Total Hours of Pedagogy	80		
Credits	5		

Course Learning objectives:

- Equip students with the ability to conduct independent and rigorous scientific research in the field of Town & Country Planning with a focus on Smart City Management.
- Enable students to formulate and test hypotheses or research questions, drawing conclusions that are supported by robust data analysis

INTRODUCTION TO DISSERTATION

Objective:

- To conduct independent scientific research on the topic of Town & Country Planning, with an orientation towards Smart City Management.
- Each student is required to undertake a Dissertation project on a subject related to any topic broadly connected to the Urban or Regional Planning, in consultation with the allotted guide. The students are required to select a topic of their choice in consultation with the Dissertation Coordinator/Special Officer/Head of the Department and carry out the research based on primary and secondary data analysis / interpretation followed by identification of issues and potentials culminating in policies, plans and proposals or in proving the formulated hypothesis or research questions.
- The Dissertation Coordinator/Special Officer/Head of the Department shall identify the potential topics and assign the Guides/co-Guides to each student for aiding their research. The students are to maintain regular meetings with the Guides (in person/Online) to update on their progress and imbibe the Guide's suggestions into their research. The students have to mandatorily maintain the Guide meeting log in the prescribed format by the department.
- Students are expected to draw inference and in-depth knowledge on their chosen topics from at least 10 Scopus indexed journal publications/case studies for their literature review.
- Students are to draw upon the learning from the Research Methodologies & IPR course from I Semester to prepare their research methodology/research proposal.
- Project identification, Research proposal, literature review, Research Methodology and Case studies shall be the basis of marking in the viva-voce during the semester examination. There shall be at least 2 reviews during the semester to present the data gathered and confirm with the guides/ reviewers the adequacy of preparatory work leading to Dissertation Stage-2 in IV Semester.

Teaching-Learning Process	***Blended learning***: Power point presentation and webinars. ***Collaborative and Cooperative learning:*** Students should work as a group and present the compilation of work starting with introduction, Creating Master Plan report and Land Use Map.

Assessment Details (CIE only)

The weightage of Continuous Internal Evaluation (CIE) is 100%. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the CIE (Continuous Internal Evaluation).

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 based on the reviews and report submitted and evaluated by the guide on the basis of the following - Project identification, Research proposal, literature review, Research Methodology and Case studies

Skill Development Activities Suggested:

- Guest Lecture from expert.
- Case Studies :
- Site Visits to Govt Agencies, Offices for understanding the roles and collecting information pertaining to the studio activities.

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Develop and test hypotheses through rigorous data analysis and interpretation	L4
CO2	Design comprehensive research methodologies integrating primary and secondary data sources.	L4
CO3	Formulate evidence-based policies and proposals based on research findings	L5
CO4	Conduct in-depth literature reviews of peer reviewed journals	L5

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔			✔	✔		✔		✔
CO2	✔			✔	✔		✔		✔
CO3	✔		✔	✔		✔	✔		✔
CO4	✔			✔		✔	✔		✔

✔ -High Impact

URBANIZATION AND URBAN ECONOMICS			
Course Code	**MTCP312A**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the concepts and history of Urbanization in India and across the Globe.
- Differentiate the policies of the different levels of Governance and their role in preparation of the Plans.
- Understand the principles, economics of land management, types of ownerships, and property rights.

Module-1

Urbanization and Urban growth –

- Urbanization in India- past and future trends-Growth Dynamics of urban centres in India. Components of National Urbanization Policy and recommendations of National Commission on Urbanization. Metropolitan Centre; Area and Region- Metropolitanization in India. Physical, economic, and demographic characteristics of Metropolitan centres in India. Metropolitan Dominance- Phenomenon of Primate Cities-Need for Metropolitan Decentralization-Satellite towns, Ring towns, and Counter Magnets.
- Case studies of metropolitan centres from India viz. Bangalore, Delhi, Mumbai, Chennai, Kolkata
- Metropolitan Plan-preparation - Role of Special Agencies in Metropolitan Management. Planning for urban infrastructure in Metropolitan Cities– JNNURM, UIDSSMT, etc schemes

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-2

Introduction to Real Estate :

- Definition and economic importance of real estate, an overview of the real estate industry. Economic and physical characteristics of land/real estate, the distinction between personal property, tangible, and intangible property.

Land Economics :

- Internal and external economies of scale, multiplier effect in regional development, the relevance of land economics for spatial planning, and factors influencing residential location decisions. Concepts of land use economics, including rent, comparison of freehold and leasehold systems, and stages in real estate development processes.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-3	
Supply and Demand : • Factors influencing land supply and demand, and the role of real estate in shaping urban land markets. Methods and models for forecasting land demand **Market Conditions:** • Analysis of market conditions (formal, informal, legal, and illegal).Impact of corruption and black money on land markets. Investment analysis tools, proformas, debt financing, property management, appraisal, and pricing of goods in real estate markets. **Role Players and Urban Policies:** • Social justice and distribution; the impact of master plans, zoning, and planning regulations on land supply and prices. Key stakeholders in real estate development, public control of private property through zoning laws, enforcement mechanisms, emerging patterns of urban land use, and the role of urban policies in shaping real estate markets.	
Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*
Module-4	
• **Land Development and Management Techniques:** Private land assembly, cooperatives, FDI, land pooling, plot reconstitution, transfer of development rights, land sharing, and land leasing. • Property Rights and Land Development: Exploration of property ownership, user rights, exchange rights, and their impact on land supply and development. Voluntary and involuntary transfers of property, types of deeds, and legal conveyance processes. • Economic Dynamics of Land Development: Income elasticity of land, business cycles' impact on land demand, externalities and internalities in land development, induced demand, and economic growth's influence on land demand.	
Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*
Module-5	
Land Pricing and Valuation: • Techniques for land valuation, pricing mechanisms including subsidies and auctions, and the impact of development types (plotted vs. flatted systems) on land pricing. Exploration of hedonic pricing and the construction of land price indices. **Land Records and Transparency:** • Management of land records in rural areas with examples from Karnataka, Andhra Pradesh, etc., promoting transparency in land transactions, methods for publicizing land prices, and monitoring land price movements. **Real Estate Regulations and Finance:** • Sources and techniques of real estate finance, regulations governing contracts and financing, alternative mortgage instruments, and the impact of transfer of development rights on real estate dynamics.	

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. ICFAI, *Urbanisation - Issues and Perspective*
2. Rashmi Sharma, *Urban Poverty An Introduction*
3. Subir Ghosh Santapsanhari Mishra, Decentralization and Development
4. Bing Xu, Juying Zeng, JunzoWatada, *Changes in Production Efficiency in China [electronic resource] : Identification and Measuring*
5. New Delhi, 1991,*Technical Papers of 39th All India T&CP Seminar*
6. World Bank, 2008, *Sustainable Land Management Sourcebook,* World Bank Publications, Washington

Web links and Video Lectures (e-Resources):

NPTEL courses -
https://onlinecourses.nptel.ac.in/noc21_hs96/preview
https://onlinecourses.nptel.ac.in/noc22_hs108/preview

Skill Development Activities Suggested

- Guest Lectures
- Case Studies

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse urban growth trends and dynamics in India's metropolitan regions	L4
CO2	Design comprehensive metropolitan plans incorporating infrastructure schemes.	L6
CO3	Assess land supply and demand factors and evaluate real estate market conditions.	L5
CO4	Formulate strategies for land development, focusing on property rights and economic dynamics.	L6
CO5	Evaluate land valuation techniques and pricing mechanisms for market transparency.	L5

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔					✔			✔
CO2	✔	✔	✔	✔	✔	✔			✔
CO3	✔					✔			✔
CO4	✔			✔	✔	✔			✔
CO5	✔					✔			✔

✔ -High Impact

SUSTAINABLE CITIES			
Course Code	**MTCP312B**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the Sustainable Development concepts, the need and the history of sustainability in the world.
- Evaluate any city/project on the principles of Three-E's, along with the emerging trends in ICT, services, and city operations.
- Create a Sustainable Development Plan for any small city.

Module-1

Introduction to Sustainable Development -

Concepts, History, Definitions, and Perspectives on Sustainability.

Theory and Background of Sustainability Planning, Changing patterns of urban growth, and Quality of life in the city.

The Three E's: Environment, Economics, ethics, and ecology of sustainability. Analysing the Three E's within an urban development debate, Ethics, Worldviews, and Sustainability. Tools for Sustainability Planning and Role of Planners.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-2

International initiatives including UN and EU level -

Introduction to Sustainable development Goals, Definitions, History, Frameworks, Parameters, and Working mechanisms.

Case studies on the Implementation of various SDGs.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-3

Sustainable Regional/Municipal Planning

Sustainable planning strategies at regional and municipal levels.

City Amenities - indicators (Liveability, Placemaking, and Walkability) environments to enhance quality of life.

Utilities (Water, Energy, Communications): Sustainable management and development.

Impact of ICT

Social Fabric: Influence of information and communication technology on community connections.

City Management and Innovation: How ICT drives urban innovation and efficient management.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-4

Sustainable Planning at City Level

Materials, Energy, and Food: Sustainable management and planning.(Macro level)

The Natural Step: Framework for sustainable decision-making.

Industrial Ecology: Integrating environmental concerns with industrial processes.

City Analysis: Problem Identification and Solutions: Assessing and addressing urban issues.

Smart Cities Design and Development: Creating cities that leverage technology for sustainability, Case Studies - Practical examples and applications.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-5

Sustainable Planning at Neighbourhood Level

Neighbourhood Planning and Sustainability: Strategies for creating sustainable communities. (Micro level)

Ecological Site Design and Architecture: Incorporating ecological principles into site and building design.

Green Building: Concept and Assessment, Principles and evaluation of green buildings. Case Study: Practical examples and applications.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.

- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Douglas Farr, *Sustainable Urbanism: Urban Design with Nature*
2. Pugh Cedric, *Sustainable cities in developing countries: Theory and practice at the millennium*
3. Yigitcanlar Tan, Kamruzzaman Md. (Liton) , 2019, *Planning, Development and Management of Sustainable Cities,* Knimbus Open ebooks
4. Sustainable Cities and Communities Design Handbook (Second Edition), Science Direct, 2018

Web links and Video Lectures (e-Resources):

NPTEL courses –
https://archive.nptel.ac.in/courses/124/107/124107011/
https://archive.nptel.ac.in/courses/124/107/124107011/
https://onlinecourses.nptel.ac.in/noc19_ce31/preview

Skill Development Activities Suggested

- Case studies
- Guest Lectures

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse the history, definitions, and perspectives of sustainable development in urban contexts	L4
CO2	Evaluate the principles and international initiatives addressing eco challenges in contemporary cities.	L5
CO3	Design effective sustainability plans using tools such as indicators and ecological footprints.	L6
CO4	Implement sustainability strategies in city services, considering the impact of ICT and public participation.	L6
CO5	Develop and present feasible innovation projects aimed at enriching urban living through smart city design	L6

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔				✔	✔			✔
CO2	✔				✔	✔			✔
CO3	✔		✔	✔	✔	✔			✔
CO4	✔	✔	✔	✔	✔	✔			✔
CO5	✔	✔	✔	✔	✔	✔			✔

✔ -High Impact

ADVANCED SOLID WASTE MANAGEMENT			
Course Code	**MTCP312C**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

- By taking this course Students will be able to inculcate by understanding:
- To make students understand the description of solid waste; different types: waste flows in society: amounts and composition of waste.
- Problems due to waste generation and strategies to minimize these problems; Consumption and waste, waste hierarchy (waste prevention, recirculation etc), product development, problem solving with a system analysis approach.
- Legal and economical means of control for waste management (Sweden and EU suggestions). Waste treatment and handling: thermal and biological methods, landfill, handling of hazardous waste.

Module-1

Municipal Solid Waste Management:

Legal and Organizational foundation: Definition of solid waste – waste generation– major legislation, monitoring responsibilities, sources and types of solid waste – sampling and characterization – Determination of composition of MSW – storage and handling of solid waste – Future changes in waste composition.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Collection and Transport of Solid Waste:

Waste collection systems, analysis of collection systems – alternative techniques for collection systems. Need for transfer operation, transport means and methods, transfer station types and design requirements.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Process of Solid Waste and Energy recovery:

Unit operations for separation and processing, Materials Recovery facilities, Waste transformation through combustion and aerobic composting, anaerobic methods for materials recovery and treatment – Energy recovery – Incinerators

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-4	
Disposal of Solid wastes Land farming, deep well injections. Landfills: Design and operation including: site selection, Geo-environmental investigations , engineered sites, liners and covers, leachate control and treatment, gas recovery and control, including utilization of recovered gas (energy), and landfill monitoring and reclamation, , Requirements and technical solution, designated waste landfill remediation – Integrated waste management facilities. TCLP tests and leachate studies. Economics of the on-site v/s off site waste management options. Natural attenuation process and its mechanisms.	
Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*
Module-5	
Household Hazardous Waste Management: Design practices of solid wastes. Definition and identification of hazardous wastes-sources and characteristics hazardous wastes in Municipal Waste – Hazardous waste regulations – minimization of Hazardous Waste-compatibility, handling and storage of hazardous waste collection and transport. Regulatory requirements for identification, characterization and disposal of hazardous, non-hazardous and domestic wastes.	
Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Rada Elena Cristina 2016, *Solid Waste Management*, Taylor and Francis
2. Kumar Sunil, 2016, *Municipal Solid Waste Management in Developing Countries*, Taylor and Francis
3. Cherry PM, New Delhi CBS Publisher & Distributors, 2016, *Solid and hazardous Waste Management*.
4. Tchobanoglous George, Theisen Hilary, Vigil Samuel A*Integrated Solid Waste Management: Engineering Principles and Management Issues*,New Delhi McGraw Hill 2015
5. Cherry PM, *Solid and hazardous Waste Management*, New Delhi CBS Publisher & Distributors 2016

Web links and Video Lectures (e-Resources):

https://nptel.ac.in/courses/105103205
https://www.coursera.org/learn/solid-waste-management
https://www.edx.org/learn/waste-management/world-bank-group-solid-waste-management?index=product&objectID=course-ed3aa6cc-9a82-4a39-965d-

Skill Development Activities Suggested

- Case studies
- Guest Lectures

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse the major legislation and organizational responsibilities in municipal solid waste management	L4
CO2	Evaluate different waste collection systems and techniques for efficiency and effectiveness.	L5
CO3	Design processes for solid waste and energy recovery, including materials recovery facilities and incinerators	L6
CO4	Develop comprehensive landfill management plans, covering site selection, design, operation, and monitoring	L6
CO5	Assess the regulations and practices for the identification, handling, and disposal of hazardous wastes in municipal solid waste management.	L5

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6

7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔				✔	✔			✔
CO2	✔			✔	✔	✔			✔
CO3	✔			✔	✔	✔			✔
CO4	✔	✔	✔	✔	✔	✔			✔
CO5	✔				✔	✔	✔		✔

✔ -High Impact

REGIONAL TRANSPORT PLANNING			
Course Code	**MTCP313A**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- To introduce regional elements in the domain of transport planning and equip students towards enhancing regional connectivity.

Module-1

Overview of Regional Planning

Approach to regional planning, types of regions and their characteristics, delineation of region for transport planning; backwardness and regional disparity in development; role of connectivity and regional transport in development and backwardness.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-2

Regional Transport Systems

Regional transport system, types, characteristics, regional transport supply, regional traffic and travel pattern, emerging issues.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-3

Regional Travel Demand

Regional travel demand determinant, regional demand models, regional accessibility, sequential travel demand models, econometric models, regional public transport demand.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-4

Regional Network Analysis

Regional network system, rural road network planning, graph theory applications- connectivity and Accessibility measures.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-5

Regional Transport Policy

Regional transport infrastructure, system planning imperatives, integration aspects, system selection, Policy aspects at regional level.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Roger Vickern, 2007, *Regional planning, regional development and transport markets*, Strategic Planning for Regional Development in the UK , Taylor and Francis eBooks.
2. Dayananda, 1900, Road transport and regional development: A study of Mandya District
3. SuklaBhaduri, 1992, *Transport and Regional Development*

Web links and Video Lectures (e-Resources):

https://archive.nptel.ac.in/courses/105/105/105105208/
https://archive.nptel.ac.in/courses/105/107/105107210/
https://onlinecourses.nptel.ac.in/noc22_ce70/preview

Skill Development Activities Suggested

- Case studies
- Guest Lectures

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse various approaches to regional planning and their impact on regional transport development	L4
CO2	Evaluate different types of regional transport systems and their characteristics	L5
CO3	Apply regional travel demand models to assess travel patterns and demand determinants.	L4

CO4	Design rural road network plans using regional network analysis and graph theory applications.	L6
CO5	Formulate comprehensive regional transport policies considering infrastructure, system integration, and selection.	L6

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔					✔			✔
CO2	✔					✔			✔
CO3	✔			✔	✔	✔	✔		✔
CO4	✔	✔	✔	✔	✔	✔	✔		✔
CO5	✔	✔	✔	✔	✔	✔	✔		✔

✔ -High Impact

LOGISTIC AND FREIGHT MANAGEMENT			
Course Code	**MTCP313B**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- This subject takes a broad view of management of logistics and freight when we examine its role in trade and how this is then connected to the business concept of supply chain management.
- In this, students will learn the methods used in strategic logistics management along with the various techniques of financial analysis for operation efficiency and legislative aspects as well.

Module-1

Introduction to Logistics Management

Logistics Management: Concepts, Definition, Evolution and Importance; Urban Logistics Ecosystem; Logistics Planning: The Actors and Their Contributions; Logistics Parks/ Hubs; Warehousing and Material Procurement; Material Storage, Handling, Processing, Packaging and Transportation; Third Party and Fourth Party Logistics; Reverse Logistics and Logistics in Trade.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Management of Freight Transport

Logistics and Mode Choice; Mode Characteristics and Key Features of Different Modes; Inter-Modal and Multi-Modal Transport; Shipping Business Environment and Containerization; Transport Cost Drivers; Freight Rate Structures; Freight Transport Best Practices: Vehicle Access and Loading / Unloading Operations, Low Emission Zones, Night Deliveries, Nearly Delivery Areas, ITS Applications.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Strategic Logistic Management

Determinants of Freight Demand; Distribution Channels and Distribution Costs; Logistics Acquisition and Production; Sourcing and Contracting; Logistics Network Planning: Vehicle Routing and Scheduling, Fleet Sizing, Location Decisions.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-4	
Supply Chain Management Fundamentals of Supply Chain Management (SCM): Concept and Components; Supply-Demand Variables; Customer Services; Drivers of Supply Chain Performance; Supply Chain Segmentation: Product, Demand, Supply and Market Segmentation; Emerging Trends and Global Practices of SCM; e-commerce and Logistics.	
Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*
Module-5	
Legal Aspects and Liabilities Statutes and Policies for Different Logistics Operations in India and Abroad; Liabilities and Liabilities Resolution; Marine / Cargo Insurance; Freight Quality Partnerships: Case Studies	
Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Massimiliano Caramia, Paolo Dell´Olmo,2010, *Multi-objective Management in Freight Logistics : Increasing Capacity, Service Level and Safety with Optimization Algorithms,*Springer London 2018
2. Julian Allen, Michael Browne, Allan Woodbu, 2010, Integrated transport policy in freight transport, Taylor and Francis eBooks.
3. Jason Monios, 2017, *Intermodal freight transport*, The Routledge Handbook of Transport Economics , Taylor and Francis eBooks

Web links and Video Lectures (e-Resources):

https://onlinecourses.nptel.ac.in/noc24_hs128/preview

Skill Development Activities Suggested

- Case studies
- Guest Lectures

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse the components and significance of urban logistics ecosystems, including logistics parks and hubs	L4
CO2	Evaluate the best practices in freight transport, including mode choice, inter-modal transport, and ITS applications	L5
CO3	Develop strategic logistics plans addressing vehicle routing, scheduling, and fleet sizing.	L6
CO4	Assess the drivers and emerging trends in supply chain performance, including the impact of e-commerce.	L5
CO5	Examine the legal aspects, policies, and liabilities associated with logistics operations domestically and internationally.	L4

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesign, monitoring, improving the functioning of Cities and Regions.	PO4
5	Understanding the diverse needs of values and systems of society and providing sustainable solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, environmental concerns.	PO6
7	Ability to do independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning with introduction of Sustainability, Smart Cities, Data Centric Planning and Management, etc.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔				✔	✔			
CO2	✔			✔	✔	✔			
CO3	✔	✔	✔	✔	✔	✔			
CO4	✔			✔	✔	✔	✔		✔
CO5	✔			✔	✔	✔		✔	✔

✔ -High Impact

URBAN DESIGN AND LANDSCAPE			
Course Code	**MTCP313C**	CIE Marks	50
Teaching Hours/Week (L:S: SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course students will be able to:

- Understand the Urban design and the significance of aesthetics and landscaping in the public domain.
- Evaluate how public and natural spaces are impacted by human interaction and make them more functional

Module-1

Introduction

Urban Design terminologies & definition, Relevance of Urban Design in Planning & Architecture Urban Renewal, Rehabilitation, Revitalization, Redevelopment and Conservation, Urban design – an integral part of Urban planning, Urban Design Theory, and Principles

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Features of Urban Design

Urban form and its determinants by the interplay of masses, voids, building typology Scale, harmony, symmetry, colour, texture, light and shade Dominance, height, urban signage and graphics, Public Realm, organization of spaces and their articulation in the form of squares, streets, vistas, and focal points, Image of the city and its components such as edges, paths, landmarks, street features, skyline,

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Surveys

Survey techniques for urban aesthetics, Steps to carry out Visual survey and its recordings, Contents, and development of an aesthetic plan, and urban design schemes. Case studies of urban design characteristics of cities in India and abroad, Related issues for public intervention. Role of urban designer

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-4

Introduction to Landscape

Landscape as a broad terminology, Natural and Man-modified landscapes. Brief history and the growth of landscape architecture as a design and planning profession from gardens to regional landscapes. Scope and nature of professional work in contemporary landscape architecture, changing priorities of disciplinary approach: ecology, biodiversity and sustainability Objective of landscape planning, environmental impact on the landscape. Landscape impact on the environment, Landscape design, and concepts used in different countries. Landscape design is related to land use, and various landscape plans.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-5

Landscape in Planning

Norms for open spaces and landscape planning. Types, hierarchy, rules and laws, functions, and importance of open spaces. Gardens and parks, National and regional parks, and Special parks. Landscape planning in association with new projects like an expressway, river roads, homes for the blind, etc. Characteristics and components of open space patterns in towns and cities (traditional and contemporary) Basic types: streets, squares, plazas, gardens, river ghats and playgrounds, public parks at district, local, and neighbourhood levels, Street furniture as a component of the urban landscape, Process of designing a functional landscape Plan

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Nirmala Rao Khadpekar, *Urban Revitalization*
2. Kevin Lynch, *The Image of the City*
3. Robert Venturi, *Complexity and Contradiction in Architecture*
4. Dixon Tim , 2014, Urban Retrofitting for Sustainability, Taylor and Francis
5. Francese Dora, 2016, Technologies for Sustainable Urban Design and Bioregionalist Regeneration, Taylor and Francis

Web links and Video Lectures (e-Resources):

- Peoples TV Education: https://www.youtube.com/watch?v=q2SmO7pPIPg
- EDU-ARCHS: https://www.youtube.com/watch?v=ORxhMiRHEpk
- https://onlinecourses.nptel.ac.in/noc20_ce11/preview
- https://www.edx.org/learn/urban-planning/delft-university-of-technology-urban-design-for-the-public-good-dutch-urbanism

Skill Development Activities Suggested

- Guest Lectures
- Webinars

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse the fundamental terminologies, theories, and principles of urban design and their relevance in planning	L4
CO2	Evaluate the determinants and components of urban form, public realm elements	L5
CO3	Conduct visual surveys to assess urban aesthetics and develop aesthetic plans and urban design schemes	L4
CO4	Examine the history and evolution of landscape architecture, focusing on its scope and professional practices.	L4
CO5	Design functional landscape plans incorporating norms, laws, and components of open spaces in urban settings.	L6

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔								✔
CO2	✔					✔			
CO3	✔		✔			✔			
CO4	✔					✔			✔
CO5	✔	✔	✔	✔	✔	✔		✔	

✔ -High Impact

HOUSING FOR SPECIAL AREAS AND GROUPS			
Course Code	**MTCP314A**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Characteristics of fringe areas and development process.
- Settlement & shelter characteristics.
- Characteristics of aging population, profile & growth of elderly persons.

Module-1

Inner city Housing –

Evolution & Historical Background, community, spatial Characteristics, housing transformation of core city, impact of transformation, Problems of inner cities, policies and programmes Fringes / Peri-urban / Sub-urban Housing Rural urban linkages , characteristics of fringe areas, development process, various modes of land Supply in fringe areas, case study with special emphasis on housing.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-2

Arid / Coastal / Hilly Region Housing

Settlement & shelter characteristics, Materials & technology, design standards, climatic factors, danger of hazards, Settlement planning, development policies and programmes.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-3

Housing for Aged/Physically Challenged

Concept & definition of old age characteristics of aging population, profile & growth of elderly persons, classification of elderly population, problems of elderly planning and design considerations for elderly, case study with special reference to housing.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-4

Housing for Women/Children

Importance of gender in housing, housing planning & design considerations with women perspective – hierarchy of spaces at macro and micro level, shelter for low-income women, design considerations for urban and rural women, housing options for different categories for single women, government schemes, case study with special reference to housing.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-5

Housing for Refugees/Outsees

Concept of refuges, types of refugees, norms for treatment of refugees, refugees law, refugees and housing, problems of refugees, planning considerations for the refugees, case study areas with reference to housing. Shelter less - Shelter less in the context of urban poor, psychological & social implications of poverty on homeless, homeless in metropolis, problems of homelessness, various interventions, night shelters, case studies. Tribal Housing – Socio cultural & economic profile, settlement characteristics, housing typology, housing schemes, policies & programmes, for tribal upliftment, case study area.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Patricia A. Crist, 2014, *Does Quality of Life Vary with Different Types of Housing Among Older Persons? A Pilot Study*,Aging in Place , Taylor and Francis eBooks
2. Amitabh Kundu, 2024, *Commentary on Housing India: Programmes, Policies and Governance*, Housing India , Taylor and Francis eBooks
3. T R Venkatesh, *Housing Sector and the Economy : Global Experience*

Web links and Video Lectures (e-Resources):

https://onlinecourses.nptel.ac.in/noc20_ar14/preview
https://archive.nptel.ac.in/courses/124/107/124107007/

Skill Development Activities Suggested

- Case studies
- Guest Lectures

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse the evolution, transformation, and problems of inner-city housing, including policies and programs	L4
CO2	Evaluate housing development processes, land supply modes, and rural-urban linkages in fringe and peri-urban areas.	L5
CO3	Design housing solutions for arid, coastal, and hilly regions considering settlement characteristics, materials, and climatic factors.	L6
CO4	Assess the planning and design considerations for housing the elderly, including their unique problems and needs	L5
CO5	Plan housing solutions that address the specific needs of women and children, considering gender perspectives and government schemes.	L6
CO6	Develop comprehensive housing plans for refugees, considering legal norms, planning considerations, and specific problems faced by refugees	L6

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔					✔			✔
CO2	✔					✔			
CO3	✔		✔	✔	✔	✔			
CO4	✔					✔			
CO5	✔		✔	✔	✔	✔			
CO6	✔		✔	✔	✔	✔			

✔ -High Impact

PROJECT MANAGEMENT IN SMART CITIES			
Course Code	**MTCP314B**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

urban management's evolution, governance structures, and legal frameworks. They will also explore smart city initiatives, integrated urban utilities management, infrastructure coordination, and sustainable financing models for urban development.

Module-1

Introduction to Urban City Management

Overview of Urban Management: Evolution, scope, and contemporary issues.

Urban Governance Structures including city manager : Role of city manager, municipal corporations, and other governing bodies.

Legal and Regulatory Framework: Urban planning laws, regulations, and their impact on city management.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Managing Smart City Initiatives

Concept of Smart Cities: Definition, characteristics, and objectives.

Technological Integration: IoT, AI, and data analytics in urban infrastructure management.

Smart City Projects: Case studies and lessons learned from global and local implementations.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Integration of Urban Utilities

Water Supply Management: From source identification to distribution network optimization.

Energy Management: Electricity generation, distribution networks, and renewable energy integration.

Waste Management: Strategies for efficient collection, recycling, and disposal.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-4

Interconnected Infrastructure and Resource Management

Integrated Urban Planning: Coordinating infrastructure projects to avoid redundancy and optimize resource use.

Transportation and Mobility: Sustainable transport systems and urban mobility solutions.

Case studies from cities around the world showcasing successful urban management practices.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-5

Financing Urban Development

Financial Models for Cities: Revenue generation, taxes, and user charges.

Public-Private Partnerships (PPP): Role in infrastructure development and service delivery.

Grants and Funding Sources: International aid, national grants, and convergence strategies for comprehensive urban development.

Financial sustainability for Local ULBs (Self-financing)

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

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Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Amitabh Satyam, igorcalzada, *The Smart City Transformations*
2. K KChitkara, *Construction Project Management Planning, Scheduling &Controlling*
3. Ben Green, 2019, *The Smart Enough City:Putting Technology in Its Place to Reclaim Our Urban Future*, MIT Press.

Web links and Video Lectures (e-Resources):

https://www.coursera.org/learn/smart-cities
https://www.edx.org/learn/urban-planning/ecole-polytechnique-federale-de-lausanne-smart-cities-management-of-smart-urban-infrastructures

Skill Development Activities Suggested

- Case studies
- Guest lectures
- Webinars

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Apply urban management principles to analyse and propose solutions for contemporary urban challenges.	L3
CO2	Evaluate smart city technologies and their integration into urban infrastructure management through case studies and real-world examples.	L4
CO3	Implement strategies for optimizing urban utilities such as water supply, energy management, and waste disposal, considering sustainability and efficiency.	L3
CO4	Develop comprehensive urban development plans incorporating integrated infrastructure projects, sustainable transportation solutions, and effective financial models.	L5

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	Pos
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔	✔		✔			✔		✔
CO2	✔	✔			✔		✔	✔	✔
CO3	✔	✔			✔	✔	✔		✔
CO4	✔	✔	✔	✔	✔	✔	✔		✔

✔ -High Impact

DISASTER AND SETTLEMENTS			
Course Code	**MTCP314C**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	30	Total Marks	100
Credits	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the different types of disasters, causes and effects.
- Elucidate the consequences of both natural and man-made disasters.
- Evaluate the different techniques of Disaster Management and the role of different stakeholders (both individuals and agencies) in disaster mitigation.

Module-1

Introduction Natural disasters

Concepts, processes, and perceptions of Disasters – natural– causes and consequences. Disaster and the natural environment: Floods and flash floods-urban floods- causes and consequences-flood controls. Land Slides, mudflow, forest fires, wildlife fires, and winter storms Cyclones-cyclone preparedness and Risk Management landslides, soil erosion, earthquakes, tremor, tsunami, cloud bursts, etc. Using technology to monitor and predict Disaster

Damage to people and property due to disaster. Case studies from across the world. Disaster Recovery.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Disaster Management

Disaster preparedness, prevention, displacement and development; Government structure and disaster mitigation, Health Issues-Evacuation behaviour-current measures- vulnerability assessment- Evacuation planning in all types of natural disasters. Emergency management-alerts and warning-Role of Communications in Alerts and warnings. Role of NDRF

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Planning and Resource Management

Human response to the disaster – short term and long-term effects; Integrating disaster mitigation in the spatial planning process: micro zoning, building bye-laws, norms, and standards, density variations, provisions of infrastructure for disaster mitigation; vulnerability index and mapping; Disaster insurance at various levels: village,

district, and town/city level. Geo-informatics-use of Remote Sensing in Disaster Management. Role and preparedness of Local Governments and NGOs in mitigating Urban Disasters.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-4

Man-Made Disaster and Management

Man-made disasters-Chemical spills, Terrorism and Urban Violence. Action plans to minimize the risks. Special Regulations. Identification of Special Areas for Development-Flood Prone Areas; Drought Prone Areas, Desert Land, and Saline Lands-Planning Appraisal and Planning Strategies

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-5

Disaster Education

Community awareness and participation at various levels; Role of ULBs, NGOs/CBOs and communities in disaster education; Relevance of disaster management with relevant to development and environment; Use of technology and media for spreading disaster awareness.

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.

The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Subir Ghosh, *Natural Disaster Management: New Technologies and Opportunities*
2. S.C. Sharma, 2022, *Disaster Management*

3. *Ilan Kelman, 2020, Arctic humanitarianism for post-disaster settlement and shelter*, Disaster Prevention and Management: An International Journal , Emerald

Web links and Video Lectures (e-Resources):

https://onlinecourses.swayam2.ac.in/cec20_ge35/preview

Skill Development Activities Suggested

- Guest Lectures & Seminars
- Site Visits

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse natural and man-made disasters using global case studies	L4
CO2	Assess strategies for disaster preparedness, prevention, and evacuation across various natural disasters	L5
CO3	Incorporate disaster mitigation into spatial planning through zoning, infrastructure provisions, and vulnerability mapping	L5
CO4	Formulate action plans to mitigate risks from chemical spills, terrorism, and urban violence	L5
CO5	Foster community awareness and participation in disaster education through NGOs/CBOs, leveraging technology and media for outreach	L4

Program Outcome of M. Plan (TCP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
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Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔				✔		✔	✔	✔
CO2	✔				✔				
CO3	✔		✔	✔	✔	✔	✔	✔	✔
CO4	✔		✔		✔	✔		✔	
CO5	✔	✔	✔		✔	✔	✔		✔

✔ -High Impact

PROFESSIONAL TRAINING / INTERNSHIP			
Course Code	**MINT385**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	-----	Viva Marks	50
Total Hours of Pedagogy	-----	Total Marks	100
Credits	7	Exam Hours	15 mins per student

Course Learning objectives:

By taking this course Students will be able to:

- To undergo professional training in any Government departments or Private firms/organizations involved in Infrastructure/ Smart City Projects/ Town Planning / Transport Planning and policies/ Urban Design/ Infrastructure development projects to get an on-site experience of handling services pertaining to Urban Planning discipline
- To utilize the forum to discuss key issues in City Planning, engage with different stakeholders
- Apply analytical skills developed in the coursework over the two semesters into practice.

COURSE CONTENT

- A Candidate shall undergo Professional Training for 12 weeks immediately after the completion of 2nd-semester examinations and before the commencement of 3rd-semester course work.
- The training shall be undertaken in any Government departments (Town Planning/ Governance/ Traffic Police Command (or similar)/ Urban Local Bodies/ Planning and Development Authorities/firms/organizations involved in Infrastructure/ Smart City Projects/ Town Planning / Transport Planning and policies/ Urban Design/ Infrastructure development projects. The training certificate shall be signed by an authorized signatory of the Government department/ Firm/ Company or Agency.
- Each student has to maintain a weekly log in the prescribed format by the department. And shall submit the same to the department during the Internal Assessments.
- Every candidate shall compile and submit a report of their Professional Training, which is signed by the authorized signatory at the Interning Organisation. Professional Training report shall consist of the certificate, project details (including work/survey maps/drawings/study etc., done by the student), Critical Self-Evaluation of the training and Manager feedback at the interning organisation and enclosing the weekly log maintained.

Teaching-Learning Process	***ICT and Digital support:*** *listening to webinars and other seminars online relevant to the topics identified.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Examination (SEE) i.e., Viva voce is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in Viva is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Viva-voce) taken together.

Continuous Internal Evaluation:

Based on monthly reviews held by internship coordinator /Special Officer/faculties at 5th 10th and 15th week of the academic calendar CIE assessment will be based on the progress made at internship. The student must maintain an internship journal as per the prescribed format from the department.

Semester End Examination (Viva voce):

1. Marks shall be awarded based on Viva Voce (15 mins per student) by One External Examiner and One Internal Examiner as appointed by the University.
2. The SEE marks awarded for the Internship shall be based on the evaluation of the Internship Report, Internship Presentation skill, and understanding of the student work at the Interning organization.
3. Critical self-evaluation of the students work in the organization will be the top criteria on which the student is awarded the SEE marks

Skill Development Activities Suggested

- Subjected to the Activities at the Internship organisation.

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Implement theoretical planning principles in real-world settings within government departments or firms involved in urban project	L4
CO2	Apply advanced planning knowledge and soft skills to contribute effectively to complex urban planning initiatives	L5
CO3	Formulate practical solutions and policies for urban planning challenges based on internship experience	L5
CO4	Prepare professional reports, including work, survey maps, drawings, and studies conducted during the internship	L4

Program Outcome of M. Plan (TCP) program:

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CO3	✔	✔		✔			✔	✔	✔
CO4	✔	✔	✔	✔				✔	✔

✔ -High Impact